

IN THE CLAIMS

Replace the claims with the following rewritten listing:

15. (New) An intervertebral disc prosthesis comprising:
two plate-shaped or cup-shaped rigid half-shells, each of the half shells being configured to be fixed to one of two vertebrae adjacent to an intervertebral disc to be replaced, the two rigid half-shells being disposed on respective sides of a compression pad and secured thereto; and
a first of said two half shells comprising, in a central zone thereof, a hollow shaft oriented toward a second of said two half shells, the second half-shell comprising, in its central zone, a stud oriented toward the first half-shell and penetrating into the hollow shaft, the compression pad including a portion operatively engaged between the hollow shaft and the stud.
16. The prosthesis as claimed in claim 15, wherein said portion of the compression pad comprises a core portion and said compression pad further comprises an outer ring portion disposed outwardly of the core portion.
17. The prosthesis as claimed in claim 16, wherein the outer ring portion of the compression pad is harder than the core portion of the compression pad.
18. The prosthesis as claimed in claim 16, wherein the core portion is cup-shaped.
19. The prosthesis as claimed in claim 16, wherein said compression pad includes another portion disposed between a free end of the hollow shaft and the second half-shell
20. The prosthesis as claimed in claim 16, wherein the core portion fills the space defined between the hollow shaft and the stud.

21. The prosthesis as claimed in claim 17, wherein the core portion fills the space defined between the hollow shaft and the stud.
22. The prosthesis as claimed in claim 16, wherein the outer ring portion has a Shore A hardness of between 60 and 100.
23. The prosthesis as claimed in claim 16, wherein the core portion has a Shore A hardness of between 25 and 30.
24. The prosthesis as claimed in claim 17, wherein the outer ring portion is made of a polycarbonate urethane type material.
25. The prosthesis as claimed in claim 16, wherein the core portion is made of a two-component silicone elastomer crosslinked at ambient temperature, and an encapsulating copolymer whose blowing agent is isobutane.
26. The prosthesis as claimed in claim 16, wherein the outer ring portion comprises a first surface and a second surface opposed to the first surface, the first and second surfaces of the outer ring portion being respectively secured to inner surfaces of the two half-shells.
27. The prosthesis as claimed in claim 17, wherein the outer ring portion comprises a first surface and a second surface opposed to the first surface, the first and second surfaces of the outer ring portion being respectively secured to inner surfaces of the two half-shells.
28. The prosthesis as claimed in claim 15, wherein the two half-shells are made of a titanium-based alloy.
29. The prosthesis as claimed in claim 15, wherein each half-shell comprises, on an outer face, pointed portions intended to promote its primary fixation to a vertebra.

30. The prosthesis as claimed in claim 15, wherein each half-shell comprises, on an inner face, lugs for attachment of the compression pad.
31. The prosthesis as claimed in claim 15, wherein the stud is threadedly engaged in a through-hole in the second half-shell.
32. The prosthesis as claimed in claim 15, wherein the stud and the shaft have trapezoidal cross sections.
33. The prosthesis as claimed in claim 15, wherein the stud and the shaft have non-circular cross sections.
34. The prosthesis as claimed in claim 15, wherein outer surfaces of the half-shells comprise a coating for secondary osseous fixation.
35. The prosthesis as claimed in claim 15, wherein the compressible pad is also secured to the hollow shaft and the stud.
36. (New) An intervertebral disc prosthesis comprising:
two plate-shaped or cup-shaped rigid half-shells, each of the half shells being configured to be fixed to one of two vertebrae adjacent to an intervertebral disc to be replaced, the two rigid half-shells being disposed on respective sides of a compression pad and secured thereto; and
a first of said two half shells comprising, in a central zone thereof, a hollow shaft oriented toward a second of said two half shells, the second half-shell comprising, in its central zone, a stud oriented toward the first half-shell and penetrating into the hollow shaft, the compression pad including a core portion operatively engaged between the hollow shaft and the stud and an outer ring portion disposed operatively of the core portion, wherein the core portion of the compression pad comprises a first material and the outer ring portion of the compression pad comprises a second material, the second

material being harder than the first material.

37. (New) A method for producing an intervertebral disc prosthesis comprising:
- providing two rigid half-shells, a first of said two half shells having, in a central zone thereof, a hollow shaft, and a second of said two half shells, the second half-shell comprising having a through-hole;
 - placing the two rigid half-shells in a mold, with hollow shaft oriented toward a second of said two half shells,
 - injecting a first cross-linkable material between the half-shells and around the hollow shaft;
 - pouring a second cross-linkable material into the hollow shaft through the through-hole in the second half shell;
 - introducing a stud into the poured second material in the hollow shaft;
 - threadingly engaging the stud into the through-hole in the second half shell; and
 - cross-linking the materials and removing the resulting prosthesis from the mold.